

**REMARKS**

**Status of the Claims:**

Claims 1, 13, 21, 34, 35, 52, and 54 are currently amended, without prejudice or disclaimer to continued examination on the merits. Support for these amendments can be found at page 13, lines 13-28, and throughout the specification. Claims 2-4, 8, 9, 12, 14-16, and 20 are original. Claims 5, 7, and 17-19 are canceled, without prejudice or disclaimer to continued examination on the merits. Claims 6, 10, 11, 22-33, 36-51, 53, and 55 are previously presented. Thus, claims 1-4, 6, 8-16, and 20-55 are presented for examination.

**Claim Rejections - 35 U.S.C. 102:**

Claims 1, 2, 6, 13, 14, 21, 22, 27-29, 31, 33, 39, 40, 42, 50-52, 54, and 55 stand rejected under 35 U.S.C. 102(e) as being anticipated by Factor (USPN 6,272,523).

Referring to claim 1, according to Examiner, Factor discloses a computer system, comprising:

- a plurality of hardware resources (physical processes/servers) (Figure 2, reference characters 28, 30, and 32);

- a plurality of logical resources (logical processes) (Figure 3, reference characters 42 and 44);

- a plurality of functional processes (web browsers/applications from clients) (Figure 3, reference character 36; col. 3, lines 53-65);

- a configuration process for configuring certain of the plurality of functional processes on particular ones of the logical resources (col. 3, lines 53-57); and

- a mapping process for creating a map associating the plurality of hardware resources with the plurality of logical resources (e.g. abstract; col. 6, lines 27-32).

Referring to claim 2, according to Examiner, Factor discloses the computer system is a network device and wherein the mapping process is a network management system process (col. 6, lines 4-10).

Referring to claim 27, according to Examiner, Factor discloses the process comprises a first process, the logical resource comprises a first logical resource and the physical resource comprises a first physical resource and further comprising:

configuring a second process (client/application) on a second logical resource (col. 6, lines 4-32; Figures 3 and 5); and

applying the configured second logical resource to a second physical resource (col. 6, lines 4-32; Figures 3 and 5).

Referring to claim 28, according to Examiner, Factor discloses the first and second processes (clients/applications) are the same process (col. 6, lines 33-39).

Referring to claim 29, according to Examiner, Factor discloses the first and second processes (clients/applications) are different processes (col. 6, lines 4-32) (it is inherent that when Factor discloses an embodiment of the invention to be used on the Internet (col. 6, line 6) that there are multiple clients to access multiple logical processes).

Referring to claim 31, according to Examiner, Factor discloses the first and second logical resources are the different logical resources (col. 6, lines 10-12).

Referring to claim 33, according to Examiner, Factor discloses the first and second physical resources are the different hardware resources (one-to-many mapping resources) (col. 3, line 66 to col. 4, line 15).

Referring to claim 39, according to Examiner, Factor discloses assigning a

logical identifier to the physical resource (col. 5, line 43 to col. 6, line 4).

Referring to claim 40, according to Examiner, Factor discloses filing in a field in a table in a configuration database (col. 4, lines 1-15).

Referring to claim 42, according to Examiner, Factor discloses the logical resource represents a physical hardware module (i.e. server) and the physical resource comprises the physical hardware module (Figures 2 and 3; col. 5, line 43 to col. 6, line 32).

Referring to claim 50, according to Examiner, Factor discloses the logical resource comprises a logical identifier (col. 5, lines 61-64).

Referring to claim 51, according to Examiner, Factor discloses the computer system comprises a network device (i.e. server) (Figures 1-3).

Referring to claim 52, according to Examiner, Factor discloses configuring the process on the logical resource comprises:

configuring network connectivity on the logical resource (allow the logical process access to the network to connect with the physical processes) (col. 4, lines 16-34; Figures 1-3);

configuring a process on a logical resource (interact with clients/applications (col. 3, lines 52-55); and

applying the configured logical resource to a physical resource (col. 4, lines 1-15).

Referring to claim 55, according to Examiner, Factor discloses the process comprises an application (col. 3, lines 53-55).

In response to these rejections, independent claims 1, 13, and 21 have been amended to include the limitation of an operating system that includes memory

management which supports a protected memory model, wherein a process is assigned a unique or separate protected memory block, such that processes may be started, upgraded, or restarted independently of other processes. Support for this limitation is found at page 13, lines 13-28, and throughout the specification. These elements enable the decoupling of software processes from the logical model and the physical system. Factor teaches at col. 3, lines 5-8 “server processes include two levels of abstraction, logical and physical. Physical processes, by assumption, have addresses supported by the transport mechanism while logical processes do not. Each logical process is implemented by a set of physical processes and the system maintains the mapping between the two. The system also provides interfaces that enable a client to send a message to a logical process, automatically redirecting the message to an appropriate physical process.” Factor does not teach an operating system with memory management which supports a protected memory model. This model enables stand-alone applications that can be upgraded on the fly, and the simultaneous running of multiple versions of an application. As shown in Figure 3, a code generator develops as many views as are needed, where, in essence, each view is an abstraction, where, similar to Factor, the abstraction keeps track of both logical and physical processes. Stated in terms used by Factor, Factor teaches a server process with one abstraction, while Applicants teach a computer system and a method where abstractions are generated as needed, and actuated as needed.

Dependent claims 2-4, 6, and 8-12 depend from claim 1; dependent claims 14-16 and 20 depend from claim 13; dependent claims 22-55 depend from claim 21 and have all the limitations as previously enumerated. As such, like the independent claims, these dependent claims should now be allowed.

**Claim Rejections - 35 U.S.C. 103:**

Claims 10-12, 32, 34-38, and 53 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Factor. Specifically, as to claim 53, Examiner indicates that Factor

discloses a method of operating a computer system as stated in the claims above. Factor does not, however, disclose adding the physical resource to the computer system, wherein applying the configured logical resource to the physical resource is delayed until the physical resource is added to the computer system. However, according to Examiner, it is suggested by the prior art that it would have been obvious to add the physical resource to the computer system, wherein applying the configured logical resource to the physical resource is delayed until the physical resource is added to the computer system for increased flexibility in that adding servers or replicating processes can all be done within the interface system totally transparent to the client (col. 6, lines 1-4).

Applicants, however, submit that dependent claims 10-12, 32, 34-38, and 53 are not obvious based on Factor in view of the amendments to the independent claims and the arguments presented in the previous section. With respect to claim 53, Factor (col. 6, lines 1-4) teaches “[t]hus, pursuant to this embodiment, the load balancing is actually done at the client level (particularly where the selection function is stored in the client's cache) rather than the server level, as with previous methods. This system and method provides increased flexibility in that *adding servers or replicating physical processes can all be done within the logical interface system 34 totally transparent to the client 22.*” Claim 53 recites “adding the physical resource to the computer system, wherein applying the configured logical resource to *the physical resource is delayed until the physical resource is added to the computer system.*” Applicants claim that the logical resource is configured after the physical resource is added, whereas Factor teaches that the logical resource is preconfigured. Applicants claim that the kernel does not need to be expanded until the physical resource is turned on or hooked up. Factor states that logical resources are already in place at the interface. All dependent claims should therefore be allowed.

Claims 23-26 and 30 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Factor in view of Bruck et al. (USPN 6,088,330) (hereinafter Bruck). Referring to claims 23, 24, and 26, according to Examiner, Factor discloses a method of operating a

computer system as stated in the claims above. Factor does not disclose detecting a fault on the physical resource, failing over from one resource to another and applying the logical resource to the other physical resource. Bruck discloses:

detecting a fault on the physical resource (col. 2, lines 23-40);

failing over from the physical resource to a second physical resource (col. 2, lines 23-40); and

applying the configured logical resource to the second physical resource (col. 2, lines 23-40).

Applicants do not claim nor teach the necessity of running a “[d]istributed detection routine which detects system functional states” taught by Bruck. Applicants teach a system resiliency manager (SRM), that determines the policy for a fault, which can include switching to a back up physical resource.

Referring to claim 25, according to Examiner, Factor in view of Bruck disclose a method of operating a computer system as stated in the claims above. Factor in view of Bruck do not disclose the event includes a resource consumption notification, however, it is suggested by the prior art that it would have been obvious to modify the system of Factor and Bruck to include a resource consumption notification to monitor the relative health of the resource (i.e. link, switch, router, etc.) and to determine if the resource is overused or underused.

Applicants claim 25 claims a resource consumption. Examiner admits neither Bruck nor Factor disclose a resource consumption notification as taught by Applicants. Claim 25 is a dependent claim depending on claim 24, which depends from claim 21. The rejection is respectfully overcome.

Referring to claim 30, according to Examiner, Factor discloses a method of operating a computing system as stated in the claims above. Factor does not disclose that

the first and second logical resources are the same logical resource. Bruck disclose the first and second logical resources are the same resource (col. 2, lines 23-35). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Bruck and Factor to allow logical resources to switch physical resources when a physical resource is not working or has been deactivated.

Applicants claim 21 provides “[a]n operating system that includes memory management which supports a protected memory model, wherein a process is assigned a unique or separate protected memory block, such that processes may be started, upgraded, or restarted independently of other processes.” Because of the isolation, the same logical resource can be employed. Bruck and Factor require a switch to another physical resource. The rejection is respectfully overcome.

Claims 3, 4, 8, 9, 15, 16, 20, 41, and 43-47 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Factor in view of Allen et al. (USPN 5,704,041) (hereinafter Allen). Referring to claims 8, 9, 20, and 43-45, according to Examiner, Factor discloses a computer system as stated in the claims above. Factor does not disclose that the hardware resources include line cards. Allen disclose that physical resources include computer cards (col. 1, lines 25-35). From this, it would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Factor with Allen to allow multiple components of a computer to be represented by objects to be monitored and itemized to facilitate monitoring and inventory.

Referring to claims 3, 4, 15, 16, and 41, according to Examiner, Factor in view of Allen discloses a computer system as stated in the claims above. Factor in view of Allen does not disclose the table comprises a logical to physical card table, however, it is suggested by the prior art that this feature would have been obvious to one of ordinary skill in the art to include to the combined system of Factor and Allen to allow the logical and physical cards to be mapped to each other, facilitating associations between resources

as well as for simplified access to important information.

Applicants claim in claims 3, 15, and 41 a process for mapping logical to physical card table and in claims 4 and 16 a process for mapping logical to physical port table. Allen, citing the prior art, teaches, "[T]he agent could represent a personal computer, for example. A managed object instance (MOI) is an object which represents some physical resource which is part of the agent such as a modem, an application program, or a computer card. Each MOI has "attributes" associated with it, such as baud rate or version number. When the manager wants to query the modem for its baud rate and perhaps change the baud rate, the manager does not want to query every single MOI within the agent." Applicants are claiming a plurality of logical resources that enables multiple processes to be independently started or stopped, while Allen is teaching an instance having a compilation of attributes. Attributes do not enable process to operate. Rejections to Applicants' claims 3, 15, and 41, and claims 4 and 16 are respectfully overcome.

Referring to claims 46 and 47, according to Examiner, Factor in view of Allen disclose a computer system as stated in the claims above. Factor in view of Allen does not disclose that the physical hardware module comprises a central processing board, but rather a card, however the prior art suggests that this feature would have been obvious to one of ordinary skill in the art to include to the combined system of Factor and Allen to further expand the number and types of physical resources available to be instantiated as an object for facilitated monitoring and inventorying.

Applicants are claiming claims 46 and 47 a board and a central processing board that enables multiple processes to be independently started or stopped, while Allen is teaching an instance having a compilation of attributes.

Claims 48 and 49 stand rejected under 35 U.S.C. 103(a) as being unpatentable over



Factor in view of Davis et al. (USPN 6,477,566) (hereinafter Davis). Referring to claim 48, according to Examiner, Factor discloses a method of controlling a computer system as stated in the claims above. Factor does not disclose the logical resource represents a physical port on a forwarding card and the physical resource comprises the physical port on the forwarding card. Davis disclose a logical resource which represents a physical port on a forwarding card and that the physical resource comprises the physical port on the forwarding card (col. 17, lines 14-27). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Davis with Factor to facilitate monitoring and management of physical resources by associating a template with the resource to facilitate message passing between the resources as supported in Davis (e.g. abstract).

Referring to claim 49, according to Examiner, Factor discloses a method of controlling a computer system as stated in the claims above. Factor does not disclose the logical resource comprises a service endpoint and the physical port comprises a port on a forwarding card. Davis disclose the logical resource comprises a service endpoint and the physical port comprises a port on a forwarding card (col. 17, lines 14-27). It would be obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Davis with Factor to facilitate monitoring and management of physical resources by associating a template with the resource to facilitate message passing between the resources as supported in Davis (e.g. abstract).

Applicants in claims 48 and 49 are claiming a logical resource that represents a physical port and the physical port on the card, where a process is assigned a unique or separate protected memory block, such that processes may be started, upgraded, or restarted independently of other processes. In contrast, Davis teach a “[s]et of ends points referencing to a network element describe all the physical and logical ports available within that network element, i.e. the physical and logical resource capacity available in that network element, and for each end point, and end point template

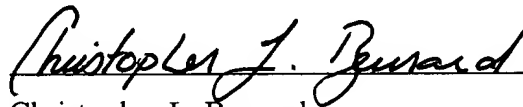
describes the vertical connectivity constraints of termination points of the corresponding port. End point templates describe intra-port connectivity and model inherent connectivity constraints within a port, e.g. as limited by hardware. Horizontal connectivity capabilities between different ports, at various different protocol levels is described by a set of inter end point connection rules specific to the network element. Such connection rules are referred to herein as CTP group templates.” Davis’ process is not decoupled while Applicants’ is decoupled. Davis does not teach that the logical service comprises a service end point and a physical port.

**Conclusion**

Applicants would like to thank Examiner for the attention and consideration accorded the present Application. Should Examiner determine that any further action is necessary to place the Application in condition for allowance, Examiner is encouraged to contact undersigned Counsel at the telephone number, facsimile number, address, or email address provided below. It is not believed that any fees for additional claims, extensions of time, or the like are required beyond those that may otherwise be indicated in the documents accompanying this paper (**indicating a 2-month extension of time for response**). However, if such additional fees are required, Examiner is encouraged to notify undersigned Counsel at Examiner's earliest convenience.

Respectfully submitted,

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